

REMARKS

In response to PTO Office Action dated 01/10/2005

In the Specification

The Examiner notes that the application lacks the necessary reference to the prior application and that current status of all non provisional parent applications should be included.

The Applicant, in response, amends paragraph on Specification Page 2 as follows:

RELATED APPLICATIONS

This is a Divisional of U. S. Application Number 09/800,171 filed on March 5, 2001, and now issued as U.S. Patent No. 6,828,372 B2.

The Applicant further submits the enclosed SPECIFICATION AMENDMENT PAPER.

The Applicant respectfully submits that this amendment is in complete compliance with the Examiner's comment.

In the Claims

The Applicant amends the claims in response to the Examiner's comments and submits the "Claims amendment paper" (including a current listing of claims).

The following further elaborate the claims amendment.

The Examiner notes that the numbering of claims is not in accordance with 37 CFR 1.126, which requires that the original numbering of claims, is preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented.

The Applicant amends to overcome the Examiner's objections. The amended claims are renumbered as claim numbers 1-29. New claims are numbered 30 & 31.

The Examiner objects to the improper dependence of claims 27 for failing to properly further limit the subject matter of a previous claim. In response, the Applicant amends claim 27, which now depends on claim 26 (in lieu of previous dependence on claim 28). This brings it in total compliance with the Examiner's comments.

The Examiner notes the abnormalities in claim 1, line 5 (should read --said member is capable of moving-- in lieu of present reading --said member capable of moving--) and claim 2, line 3 (should read --material may be fed into-- in lieu of present reading --material may fed into--).

The Applicant amends the respective line of claim 1 as follows: --a member in sealable connection with said interior portion for adjustably controlling the density of the material--.

The Applicant cancels claim 2.

It is thus submitted that these amendments now overcome the objections raised therein.

The Examiner has raised double patenting rejection between two groups of claims: (claims 1, 13, 14 and 16) and (2, 4, 5 and 6) as being substantial duplicate. In response, the Applicant amends as follows.

The Applicant cancels claim 2 as substantial duplicate of claim 1.

Applicant makes a minor amendment to claim 3 that has no bearing on patentability.

The Applicant makes a minor amendment to claim 4 that has no bearing on patentability. Applicant cancels claim 13 as a substantial duplicate of claim 4.

It is thus submitted that these amendments now overcome the objections or rejections raised therein.

The Examiner has raised claim rejections for claims 5-9 and 17-29 under 35 USC § 112 2nd Paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Each rejection is individually listed with the Applicant's response therewith.

Claim 5 is vague and indefinite because it is unclear whether both a gear and a brake are part of the claimed invention or just one.

The Applicant amends relevant portion of claim 5 to read – one gear and one brake – amending the prior text – one gear and/or at least one brake—. The applicant cancels claim 14 as substantial duplicate of claim 5.

Claim 6 is vague and indefinite because it is unclear what a “mech valve” is.

The Applicant amends claim 6 to read – further comprising a valve means – amending the prior text – mech valve—. Claim 16 is canceled as being a substantial duplicate of claim 6.

Claim 7 is vague and indefinite because it is unclear whether both a tail stop and a sensor are part of the claimed invention or just one.

The Applicant cancels claim 7.

Claim 8 is vague and indefinite because it is unclear whether a “mold with at least one end” is the same mold or a different mold from the mold of parent claim 2.

The Applicant amends claim 8 to read – The apparatus of Claim 1, further having said mold– amending the prior text – The apparatus of Claim 2, further having a mold —. This amendment removes the ambiguity in “mold” since it relies on proper antecedent basis assigned in claim 1.

Claims 1-9 and 13-16 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,447,101 issued to Fritsch. Fritsch teaches an apparatus having a mold having at least one side wall defining an interior portion and an injector port whereby an extrudable material may be injected through the injection port into the mold; a member whereby the member is in sealable connection about the interior portion of the mold -- whereby the member may adjustably control a density of extrudable material; the controlling

member is a back pressure piston; the member includes a brake and a gear; a mech valve to shut off the flow of material and a tail stop/ sensor to indicate when the valve should shut; the mold having at least one end wherein the mold further has a rod on or about at least one end; the end and rod are pushed outwardly as the mold fills and the rod is detected by a sensor when the mold is filled.

The Applicant respectfully traverses that part of the description attributed to Fritsch is not found in Fritsch disclosure. The following quote: "whereby the member may adjustably control a density of extrudable material; the controlling member is a back pressure piston; the member includes a brake and a gear; a mech valve to shut off the flow of material and a tail stop/ sensor to indicate when the valve should shut" are not part of Fritsch disclosure, nor are they equivalent counterparts to elements found in Fritsch disclosure. In fact they are part of the Applicant's invention.

As shown in Fig. 7, Fritsch uses worm (#17) to inject material into the shaping mold cavity (#18). The piston (#27) operates under a counter pressure due to the operation of the servo unit (#25). Such counter pressure causes the soft raw rubber entering into the shaping cavity continuously to occupy fully the available space in the cavity. The drive for worm stops when contacts (#31, 34) activate to disconnect the worm drive. (Fritsch, Column 5, lines 5-10). The stoppage of worm and position of piston in the mold cavity determine the shaping of rubber slugs to desired lengths. (Fritsch, Column 5, lines 50-70). This arrangement is not capable of controlling the density. It merely adjusts the length of the rubber slugs. (Fritsch, Column 6, lines 17-22). Moreover, the gear described in Fritsch is not equivalent to a mech valve in the Applicant's invention because the worm in Fritsch does not teach valve means. Fritsch objective is to provide an apparatus to produce rubber shapes as a precursor to prepare them for later use in a vulcanizing press, far short of the object of the Applicant's invention. (Fritsch, Col. 1, line 60-65 and Claim 1). The other major distinction is that Fritsch uses a servo unit to provide the back pressure across the piston where as the present invention uses the piston as the controlling element that can adjustably control the density of the material.

The control of density during the period a mold is being filled is the novelty in the Applicant's invention. The Applicant's specification and Figs. 2 & 3 describe as follows. The density of the material in a given mold is varied, or made constant by controlling the braking

mechanism comprised of the brake pad 84 against the disc 86. The effective length of the mold increases as the piston 32 is pushed through the mold, the density of the molded material will decrease as a function of the distance through which the piston 32 moves. If a uniform density of the molded product is desired, the velocity of the piston can be continuously decreased by applying back pressure at a continuously increasing rate. (Applicant's disclosure in parent Application, Issued as Patent 6,828,372, Col. 4, line 5-17).

Applicant respectfully submits that the rejection to claims 1-9 and 13-16 is now traversed.

Claim 9 has a minor amendment not bearing on the patentability.

Claims 1-6 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Valyl (5,082,604). Valyl teaches an apparatus having a mold having at least one side wall defining an interior portion and an injector port whereby an extrudable material may be injected through the injection port into the mold; a member whereby the member is in sealable connection about the interior portion; the member is capable of moving along the interior portion of the mold -- whereby the member may adjustably control a density of extrudable material; the controlling member is a back pressure piston; the member includes a brake and a gear; a mech valve to shut off the flow of the material.

The Applicant respectfully traverses that part of the description attributed to Valyl is not found in Valyl disclosure. The following quote: "whereby the member may adjustably control a density of extrudable material; the controlling member is a back pressure piston; the member includes a brake and a gear; a mech valve to shut off the flow of material" are not part of Valyl disclosure, nor are they equivalent counterparts to elements found in Valyl disclosure. In fact they are part of the Applicant's invention.

As shown in Fig. 1, Valyl uses fluid pressure entering the downstream side of the injection mold chamber to provide a holding pressure to avoid shrinkage in the mold cavity as mold cools. (Valyl, Col. 1, lines 58-62). In Valyl, the stoppage of flow to the mold cavity is by closing a valve without adequate disclosure as to what closes the valve. The valve functionality in Valyl is vague and indefinite. (Valyl, Col. 2, lines 30-33). Lacking proper disclosure, Valyl valve is not an equivalent to a mech valve in the Applicant's invention.

Valyl uses an external fluid pressure unit to provide the back pressure across the piston whereas the present invention uses the piston as the controlling element that can adjustably control the density of the material. Again, as explained earlier in the discussion of Fritsch, the control of density during the period a mold is being filled is the novelty in the Applicant's invention.

Applicant respectfully submits that the rejection to claims 1-6 and 13-16 is now traversed.

The Examiner states that claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Fritsch or Valyl in view of VonHoldt, Sr. (5,380,184). Fritsch and Valyl each teach the invention as discussed above but Fritsch and Valyl each fail to teach a means to divert the material to another mold that is not filled, the means being a diverter valve and a first and second diverter station. Von Holdt, Sr. teaches a diverter valve for the purpose of alternately feeding a first and second diverter station (col. 1, line 55 – col. 2, line 5). It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the inventions of Fritsch and Valyl with a diverter valve as taught by Von Holdt, Sr. because it would enable multiple products to be made with multiple molds each alternatively supplied by a single source.

35 USC §103 authorizes a rejection where, to meet the claim, it is necessary to modify a single reference or to combine it with one or more other references. In our case, there are no references outstanding after the Applicant's respectful traverse of 102(b) rejections under either Fritsch or Valyl. Thus Van Holdt, Sr. by itself is not sufficient to justify a 103(a) rejection. Therefore, we respectfully traverse the 103(a) rejection of claims 10-12 in the present case.

Furthermore, claims 10-12 have minor amendments not bearing on patentability.

Claims 13, 14 and 16 are canceled for substantial duplication of claims 4, 5 and 6 as discussed supra.

The Applicant makes a minor amendment to claim 15 that has no bearing on patentability.

The Examiner finds claims 17-29 as allowable after the suggested amendments under 35 USC § 112, 2nd paragraph are incorporated.

Claim 17 is vague and indefinite because it is unclear whether a Banbury mixer is being used or another mix is being used. It is also vague and indefinite because it is not clear whether both a tail stop and a sensor are part of the claimed invention or just one.

The Applicant amends claim 17, 3rd line by deleting any reference to Banbury mixer or a chamber mixer. The amended version simply reads -- a chamber for mixing the materials--. The amended claim further deletes claim 17, 9th line text -- a tail stop and/or a sensor --. Claims 18 through 29 are dependent on claim 17 and individually presented in the following discussion further.

Claim 18 is a dependent claim and its dependence reference of claim No. 55 is amended to claim No. 17. The amendment replaces the phrase -- further comprising -- with -- wherein the members are molded in a --. These are minor amendments to bring it in allowable form, and are not bearing on patentability.

Claim 19 is a dependent claim and its dependence reference of claim No. 55 is amended to claim No. 17. The amendment replaces the phrase -- a means to shut off the flow of said injected material when at least on mold-- with -- said valve means to block the flow of material to the mold that is--. These are minor amendments made to bring it in allowable form, and are not bearing on patentability.

Claim 20 is a dependent claim and its dependence reference of claim No. 55 is amended to claim No. 19.

Claim 21 is a dependent claim and its dependence reference of claim No. 58 is amended to claim No. 19.

Claim 22 is a dependent claim and its dependence reference of claim No. 55 is amended to claim No. 17. Additionally, replaced previous phrase -- said mold -- to -- the mold --; Replaced -- rod which extends -- to -- a sliding rod extending outward ; Replaced -- is pushed -- to -- said sliding rod moving outwardly --. These are all minor amendments made to bring it in allowable form, and are not bearing on patentability.

Claim 23 is a dependent claim and its dependence reference of claim 60 is corrected to claim 22; amended by inserting phrases – in its outward end position – and –or substantially full –. These are all minor amendments made to bring it in allowable form, and are not bearing on patentability.

Claim 24 is a dependent claim and its dependence reference of claim 61 is amended to claim 23; Replaced phrase – causes the mold to close – by – closing the mold that is filled or substantially filled and diverting the material to another mold that is not filled –.

Claim 25 is canceled. This claim had reference to – water bath –. This reference is further amended to – cooling bath – in claim 30. Therefore, this claim, which depends from claim 30 is now renumbered as claim 31.

Claim 26 is a dependent claim and its dependence reference of claim 60 is amended to claim 17.

Claim 27 is a dependent claim and its dependence reference of Claim 66 is amended to claim 26.

Claim 28 is a dependent claim and its dependence reference of claim 65 is amended to claim 17.

Claim 29 is a dependent claim and its dependence reference of claim 55 is amended to claim 17; Deleted phrase – controlling – as qualification of the term – member –; Added – the phrases – that adjustably controls the density –; revised –one gear and at least one brake – to – one piston, one gear and one brake. These are all minor amendments made to bring it in allowable form, and are not bearing on patentability.

Claim 30 is a new claim. “The apparatus of Claim 17, further comprising a cooling bath for cooling the mold or molds.” As stated in our explanation of canceled claim 25 above, this new claim replaces the phrase – water bath– with –cooling bath–. The term cooling bath is covered in the disclosure of the present invention and is properly presented.

Claim 31 is a new claim. “The apparatus of Claim 17, further having means to put the mold into the cooling bath and means to take the mold out of the cooling bath.” As stated

in our explanation of canceled claim 25 above, this new claim replaces the canceled claim 25 and is properly presented.


Conclusion

For the reasons submitted, Applicant respectfully submit that the added, unamended, and amended claims are patentable and completely overcome all objections and claim rejections, and that the Applicant's claims define novel structure and function, which is also unobvious. Therefore, Applicant submits that these claims and amendments now place this application in condition for allowance. If the Examiner is of the opinion that the claims are not in condition for allowance then the Examiner is respectfully encouraged to contact the undersigned in order that this application can be placed in allowable condition as soon as possible and without the need for further proceedings.

A further one (1) month Petition for Extension of Time is filed simultaneously herewith and this Response is, therefore timely.

The small entity fee for one-month extension of time (\$60.00) is enclosed in the form of a check herewith. However, the Commissioner is authorized to charge any deficiency or credit any overpayment to USPTO Deposit Account No. 13-2166.

Respectfully submitted,



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